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Developing a Method: How Dance/Movement Therapy Affects Pain, Anxiety and Quality of Life in Pediatric Oncology

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Abstract

Children diagnosed with cancer experience physical symptoms such as gastrointestinal distress, general illness, and pain-related symptoms as well as psychosocial symptoms such as emotions of sadness, anger, fear, isolation from family members, and self-esteem changes. A comprehensive understanding of these concerns and symptoms can develop a better means for communication and support of children and their families. Inspired by the potential for dance/movement therapy to decrease pain and anxiety and increase overall quality of life with the pediatric oncology population, the researcher explored the impact of dance movement therapy groups on 4-year-old pediatric oncology patients with varying cancer diagnoses. Weekly sixty-minute sessions took place with a heterogeneous group of at a suburban area pediatric children's hospital, the Lehigh Valley Reilly Children's Hospital. Two session plans focused on the goal of either decreasing pain or anxiety and increasing quality of life. The anxiety and coping skills session produced an observed shift from high energy in the form of loud rapid speech, fluid storylines, expansive and quick arm and leg movements to an observed calm energy in the form of deeper breathing, control over body and mind and clearer verbal communication. Due to the pandemic of Covid-19, information on pain management and dance/movement therapy could not be obtained. Suggestions for future studies include the use of dance/movement therapy during the cancer experience, with the pediatric oncology population focusing on predominant symptoms being experienced and how dance/movement therapy can be utilized to address the trauma that comes with a cancer diagnosis.

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"by using creative expression, a child or adolescent with cancer can express feelings about the course of the disease and tumultuous treatment through dance/movement, music and art. This outlet allows the patient to creatively and kinesthetically process the assaults of cancer and its treatment, and thus establish a stronger sense of self and improved quality of life." (Madden et. al. 2010, p.133)

Introduction

The National Cancer Institute reports that in 2018 an estimated 15,590 children and adolescents between the ages of 0-19 were diagnosed with cancer and an estimated 1,780 will have died from the disease in the United States (National Cancer Institute, n.d.). To put this into more of a perspective, about 43 children each day are diagnosed with cancer. Children diagnosed with cancer experience physical symptoms such as gastrointestinal distress (nausea and stomachache), general illness (fatigue) and pain-related symptoms and psychosocial symptoms such as emotions of sadness, anger, fear, isolation from family members and self-esteem changes (Linder et. al., 2018). A more comprehensive understanding of these concerns and symptoms can develop a better means for communication and support of children and their families.

Pain and anxiety are prominent experiences of children diagnosed and undergoing treatment for cancer. Pain, as described by the International Association for the Study of Pain (2018) is an "unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage." Ruland and Hamilton (2010) noted within their study that pain parameters such as intensity, location and pattern were characterized as uncomfortable, annoying, feeling sore, treatment-related, procedure-related, headache, acute or

chronic.

Anxiety, as described by the American Psychological Association (2020) is "an emotion characterized by feelings of tension, worried thoughts and physical changes like increased blood pressure." Ruland and Hamilton (2010) additionally noted that anxiety was characterized as general, social, school related, procedure-related, treatment-related, separation, nervous, and feeling.

Dance/movement therapy, as defined by the American Dance Therapy Association is the "psychotherapeutic use of movement to promote emotional, social, cognitive and physical integration of the individual" (American Dance Therapy Association, n.d.). Koch et. al. (2019) suggested that dance/movement therapy decreases anxiety and depression and increases quality of life as well as improve psychological functions like emotion regulation which can be facilitated through authentic expression, mind-body integration and physiological changes. Similarly, the response to change, crisis and emotional and physical stress in our lives can significantly affect the immune system and illnesses that plague our bodies (Sherwood, 2008).

Together, pediatric oncology and dance movement therapy creates medical dance/movement therapy. Cohen and Walco (1999) believed that including dance/movement therapy as part of the team addressing the psychosocial needs of the oncology children and adolescents, there would be more of an opportunity to facilitate a patient's ability to cope. Tortora (2019) went into more detail and described the goals of treatment utilizing dance/movement therapy; to improve stress management, improve quality of life, develop pain management techniques, reduce depression and anxiety, improve self-image and body awareness, decrease fatigue, increase energy, build resilience and hope, increase self-care, improve social support and learn to accept the unpredictability of life. Mendelsohn (1999) stated

"The child's posture, movement or avoidance of movement, quality of movement, initiative or lack of it, and breathing patterns are all external manifestations of the child's state of mind" (p. 67), which reinforced the concept of the mind-body connection.

Majority of the research available focused on the effects of cancer on adults; there is minimal research on pediatric oncology, let alone the use of dance/movement therapy with pediatric oncology. Due to the limited research findings, childhood cancer statistics and academic concentration, this researcher was inspired to focus on dance/movement therapy with the pediatric oncology population. This researcher specifically observed if dance/movement therapy could decrease pain and anxiety and increase overall quality of life in pediatric oncology patients. The aim of this paper and of this method was to examine the effects of utilizing dance/movement therapy in conjunction with medical treatment as it relates to the patients physical and emotional symptoms of pain and anxiety. This thesis begins with a presentation of information and research on patient reported symptoms and experiences with a focus on pain, anxiety and quality of life, dance/movement therapy and medical dance/movement therapy, two sessions that focused on pain and anxiety that were implemented and the results. This thesis concludes with the discussion of the experience and calls for more research to be done within the field of pediatric oncology and dance/movement therapy.

Literature Review

Patient Reported Symptoms and Concerns

To appropriately address the needs of the pediatric oncology population, one must understand their symptoms and concerns when navigating a cancer diagnosis. To create a complete picture, it would be beneficial to obtain information from the start of their journey, receiving a cancer diagnosis. According to the American Cancer Society (2019), children, between the ages of 1- 14

years old, are commonly diagnosed with leukemia, brain and spinal cord tumors, neuroblastoma, Wilms tumor, lymphoma (including both Hodgkin and non-Hodgkin), rhabdomyosarcoma, retinoblastoma, bone cancer (including osteosarcoma and Ewing sarcoma).

When a child receives the diagnosis of cancer, their lives and the lives of their family and friends are altered. Emotions, such as anxiety, surface as a result of receiving this diagnosis and the unknown territory of treatments and their effects that will soon be explored. Mant et. al. (2019) revealed that children and young people felt restricted, isolated and distressed by their treatments and how they have affected their lives and additionally described parental and patient self-reports indicating that children, in the first few months after diagnosis, experienced varying levels of anxiety and depression symptoms.

The qualitative study by Mant et. al. (2019) aimed to understand the experience of learning you have cancer from a child's perspective, with the intention that a more comprehensive understanding can develop better means for communication and support of children and their families. Six children between the ages of 8-12 who were newly diagnosed with cancer participated in two interviews that utilized the draw and write technique. The results were analyzed using interpretive phenomenological analysis, which focused on understanding how the individual made sense of their experiences. This analysis revealed five themes acknowledged by the participants. The first theme, *shocked and scared* indicated that the participants understood that their diagnosis was serious and potentially life-threatening which lead to feeling distressed, angry, anxious, fearful and confused. Theme two, *chemo is an awful thing* described the participant's feelings about how chemotherapy has impacted their lives and the negative emotions associated with it. Many of the children described feeling restricted, sick and tired. Theme three, *please talk to me*, the more I know the better I feel, described how

children felt more in control when the purpose of their treatment was communicated, leading to more cooperation with medical procedures. Theme four, *I accepted treatment and quickly got used to it because I know I will get better*, described the children's eventual acceptance of treatment, despite the unpleasant nature, which shifted their emotional responses. Belief in a cure acted as a coping mechanism. The final theme described by Mant et. al. (2019) was *my family is vital*. This theme encompassed the participant's need for family to be present and to aid in communication and reflect their emotional responses.

Once a child is diagnosed with cancer, identifying specific symptoms such as physical and psychological, provide more insight into their experience as well as offer information on what needs to be addressed. Linder et. al, (2018) examined how 27 children between the ages of 6-12 who were receiving treatment for cancer represented their symptoms and other related characteristics using draw-and-tell interviews. The children's drawings identified gastrointestinal (nausea and stomachache), general illness (fatigue) and pain-related symptoms as predominate physical symptoms. Emotions such as sadness anger, fear, isolation from family members and self-esteem changes were identified as predominate psychosocial symptoms. Linder et. al. (2018) defined self-management as a dynamic interactive process in which patients with a chronic illness utilize strategies that allow them to cope with the elements of their symptoms throughout their daily lives. The constant changing of children's symptoms as well as "children's developmental abilities also influence the manner in which they articulate and respond to their symptoms" (p. 290), making self-management challenging. Although self-management may be challenging, these children identified physical care, psychosocial care and medication-related strategies to help manage their symptoms. The predominate physical care strategies used were lying down or resting to manage their energy level, using blankets to provide personal comfort

and positioning themselves near resources. Psychosocial care strategies such as arts and crafts provided a distraction, rearranging their hospital room to resemble their home enabled personalization and normalizing to occur, and having a supportive person implored the use of relationships.

The child's response to being told they have cancer and their subsequent symptoms provide information about the "what" of their experience; what are they feeling and what is happening to them. Based on this information, the next step is to understand how they can be helped. Ångström-Brännstrom and Norberg's (2014), investigated how children between the ages of 3 and 9 years old who were undergoing cancer treatment described their experience of comfort. Nine children, all receiving chemotherapy participated in the study. The analysis revealed four prominent themes: enduring and expressing discomfort, finding comfort and comforting others. Children identified family, hospital staff and themselves as the main sources for enduring discomfort. Children reported that their parents' presence aided in distracting them from procedures and helped them feel more secure. Additionally, children stated that conversations with information and bouts of humor with nurses and tangible means for help, such as help button, helped ease their discomfort. Despite knowing what to expect from procedures, children experienced fear and pain but found that by expressing these emotions, they were able to handle them better. Children reported feeling comforted when playing with other children on the unit and staff. Children did not rely on interactions with others to feel comforted; "If no one can comfort me, I comfort myself" (p. 141). Lastly, children reported feeling comforted when they soothed their parents and siblings. Ångström-Brännstrom and Norberg (2014) explained that the "children in our study expressed feelings to show their need for comfort and also found comfort in expressing feelings of pain, fear and despair" (p.142). Thus,

the importance of facilitating children's communication in order to provide them with the best care possible was emphasized.

Pain, anxiety and quality of life.

Pediatric oncology patients consistently identified pain, anxiety/fear as prominent experiences and sensations during their journey with cancer. Additionally, they expressed concern for the level of impact that a cancer diagnosis, treatments and their side effects will have on their ability to engage in their daily activities, ultimately affecting their quality of life.

In their integrative literature review, Ruland and Hamilton (2009) identified symptoms and issues that pediatric cancer patients experienced during treatment and rehabilitation. Summarized was the knowledge regarding the range of symptoms and problems experienced by children with cancer reported in the literature, how children describe their symptoms and problems, what terms/expressions they use, how children's symptoms and problems vary during the course of their illness and the relationships between children's symptom experiences and age, gender, or race (Ruland and Hamilton, 2009).

The review completed by Ruland and Hamilton (2009) resulted in the identification of 219 distinct symptoms or problems as either the main problem or a symptom of the main problem. Ruland and Hamilton (2009) stated that because children "vary widely in their symptom and problem experiences, self-awareness and distress" (p. 404), clinicians cannot anticipate what children are experiencing. Due to their communicative limitations, children with cancer are at risk for their symptoms and problems to go underdiagnosed and undertreated. Anxiety was characterized in the literature as general, social, school related, procedure-related, treatment-related, separation, and a nervous feeling. Children characterized fear as "scared, afraid I won't wake up, afraid, think about dying" (Ruland and Hamilton, 2009, p. 410) and

anxious. Pain was characterized as uncomfortable, annoying, feeling sore, treatment-related, procedure-related, headache, acute and chronic. Children characterized pain as "sick feeling, hurting feeling, hurting, yucky, crappy, shitty, feel sore, aching, annoying, comes and goes, annoying, hating chemotherapy, hate getting the poke" (Ruland and Hamilton, 2009, p.410).

Pain and anxiety can manifest physically in a patient's body which indicates the connection between the internal and external experiences. As a result, Dowler (2016) examined the effects of improvised somatic dance (ISD) in children and young people experiencing acute pain as a complementary approach to current methods. Improvised somatic dance (ISD) is described as a non-traditional and non-directive approach to creative dance and movement, is inclusive and empowers each participant to engage in movement considering their medical condition as well as their emotional and physical experiences. Twenty-five children and young people were included in this study where participants and witnesses to verbalized their experience as well as the self or parent reported pain assessment tools. Dowler (2016) described in detail the loose structure of the ISD sessions. The practitioner, cognizant of their own internal breathing and rhythm, enters the space attuning to the client as they wait for a verbal or non-verbal invitation. Once the invitation is received the client and practitioner begin moving and creating together, developing a spontaneous dance of subtle and expansive movements. Lastly, the session concludes with relaxation and rest. The study found that 92% of the participant's experienced significant reduction of pain during and after the ISD. Of those who experience pain reduction, 80% experienced greater than 50% pain reduction. Additionally, witnesses reported that participants were happier with reduced anxiety and tension and were better able to move.

Dowler (2016) stated "dance invites the participant to use their imagination, a cognitive approach which directs attention away from the pain and often into an imaginary world. A

somatic approach also includes the benefits of a behavioral technique by creating a focus and awareness on the breath and then expands this to connect breath and movement" (Dowler, 2016, p.24). Additionally, stated is how empowering it can be for children and young people to choose their own ways of moving when there is little choice around being in a hospital and the medical treatments received.

The side effects of the treatments utilized during a cancer diagnosis have been identified as a concern and more so how these side effects can affect the child's ability to engage in their daily activities. These side effects create change and require adaptability and these changes that occur have the ability to affect a patient's quality of life. Puetz et. al. (2013) reviewed the results of twenty-seven randomized control trials (RCTs) that included 1576 patients to evaluate the effectiveness of creative arts therapies (CAT) on psychological symptoms and quality of life (QOL) of oncology patients. The article defines CAT as art, dance, drama, music, writing and psychological symptoms of anxiety, depression, pain and fatigue. At the time of post-intervention, symptoms of anxiety, depression and pain was significantly reduced; pain was the only symptom to have continued to decrease by follow-up. Fatigue did not show a reduction post-intervention or at a follow-up and QOL showed a significant increase post-intervention but did not continue at follow-up.

Madden et. al. (2010) continued on this trajectory and through the use of a mixed method pilot study, evaluated the effects of the CAT on the QOL of children with brain tumors receiving chemotherapy. The brain tumor patients were randomized to two groups and tested before, during, and after the intervention. The experimental group engaged in six CAT sessions from a licensed dance/movement therapist whereas the control group engaged in reading, talking, or watching TV with a volunteer. The nonrandomized patients participated in CAT with the

therapist for 1 hour each week and were tested before and after the group intervention. The results of the randomized controlled phase found improvement in parent reported child pain and nausea after the CAT interventions. The nonrandomized phase, which utilized a different instrument displayed improved mood and patients were more excited, happier and less nervous. Madden et. al. continued stating that chronically ill children that engaged in movement therapy interventions have experienced improvement in their symptoms and ability to cope (Goodill & Morningstar, 1993). Madden et. al. (2010), concluded stating:

> by using creative expression, a child or adolescent with cancer can express feelings about the course of the disease and tumultuous treatment through dance/movement, music and art. This outlet allows the patient to creatively and kinesthetically process the assaults of cancer and its treatment, and thus establish a stronger sense of self and improved quality of life. (p.133)

Dance/Movement Therapy and Body Oriented Psychotherapy

Looking more specifically within the creative arts therapies, Sherwood (2008) identified the somatic connection between mind and body well-being based on the anthroposophical medical model through the lens of Steiner (1994) and Pierrakos (1987) who stated that the body is the map of mind experiences since they are connected. Sherwood (2008) discussed the mind-body model of body-based psychotherapy, which focused on how our response to change, crisis and emotional and physical stress in our lives can significantly affect the immune system and illnesses that plague our bodies. As well as that these responses can create pathways that are habitually traveled when experiencing specific stimuli, ultimately effecting how the world is experienced. This medical model is described as the “energetic interconnectedness of all dimensions of the human being with a strong emphasis on mind-body connectedness, with the

highest vibratory levels profoundly influencing the lower vibratory levels" (Sherwood, 2008, p. 83). These levels include the physical body, the etheric or vital force, astrality or the lower layers of the mind where sensory experiences are held, and the "I" which is the highest level of human consciousness. In the expressive artistic therapies, gesture, sound and color are described as facilitators for the mind-body connection because of their abilities to promote communication. These artistic therapies provide the opportunity for mind-body reconnection and inform interventions that can change troublesome patterns into more healing patterns.

Reich (1945) in Sherwood (2008) described the need for the use of bodily movement to enable repressed experiences to emerge so that change can occur. Reich stated that repressed feelings could constrict the body, acting as a means for protection, reducing its ability to feel or move. Sherwood (2008) later discussed the reconnection of mind-body experience through the use of the artistic therapies, specifically focusing on the connection between breath and the mind-body connection. Sherwood described that during mediation, if the breathing is slowed down enough then the whole body can enter a state of calm and relaxed rhythmical breathing, the opposite of the stress response. Sherwood closed with addressing the use of the expressive artistic therapies to integrate and renew mind-body experiences specifically targeting grief, loss, shock and betrayal.

In addition to the physical component of a cancer diagnosis, there is also a psychological component of the cancer experience that needs to be addressed. Koch and Fischman (2011) focused on the concept that dance/movement therapy is an embodied and enactive form of psychotherapy and that these approaches are informed by each other. The embodied enactive approach views individuals as living systems and emphasizes body motion and sensorimotor experiences as key elements in one's ability for formulating concepts and abstract thinking. The

authors stated that the theoretical framework of dance/movement therapy is influenced by the embodied and enactive approaches that are derived from cognitive sciences and phenomenology. The authors stated that the term enaction supports the effectiveness of dance/movement therapy as it "works on the repertoire of the patient's movement patterns, bringing them to a conscious level, and offers an unprecedented opportunity to expand this range through new "intersubjective experiences"" (p.59). Embodiment was referred to as the idea that the body is a living organism and the expressions, movement and interaction with the environment are central to "the explanation of perception, cognition, affect, attitudes, behavior and their interrelations" (p.60). Through experiencing, rather than analyzing, patients become aware of their behavioral patterns while recognizing new possibilities thus expanding their repertoire.

Furthermore, Fischman (2009) is cited stating that dance/movement therapy and the dance/movement therapist focuses on movement sensing and how movement makes sense to identify and resolve what is deeply rooted in the body. Koch and Fischman (2011) concluded their article stating the embodied and enactive approaches strengthen the hypothesis of the body being the foundation for thought and affect as well as providing scientific value and validation of theoretical principles in dance/movement therapy.

Similarly, Koch et.al (2019) in their meta-analysis, evaluated the effectiveness of dance/movement therapy and dance interventions for psychological health outcomes. Authors synthesized 41 controlled studies, 21 from dance/movement therapy and 20 from dance, of which they investigated quality of life, clinical outcomes with subsequent analyses of anxiety and depression, interpersonal skills, psychomotor skills and cognitive skills. Koch et. al (2019) included randomized controlled trials in the areas of depression, anxiety, autism, schizophrenia, oncology, neurology, chronic heart failure, elderly patients and cardiovascular disease and

included follow up data for eight studies. The results suggested that dance/movement therapy decreases anxiety and depression and increases quality of life whereas dance interventions increase psychomotor skills.

Additionally, Koch et. al. (2019) referenced a meta-analysis (as cited in Koch et. al, 2014) that reported results of improved anxiety levels due to dance/movement therapy and dance interventions. Included in this article were 18 specific disease related reviews, and as it relates to this thesis, two meta-analysis in oncology, where mixed results were found regarding the effects of DMT and dance on quality of life In regards to clinical outcomes, Koch et. al. (2019) surmised that DMT and dance interventions can improve psychological functions like emotion regulation which can be facilitated through authentic expression, mind-body integration and physiological changes. Interpersonal skills were also addressed in the article specifically stating that DMT and dance interventions may improve the therapeutic relationship, group cohesion and nonverbal communication.

Medical Dance/Movement Therapy

Based on the included research, there are clear physical and psychological benefits of utilizing dance/movement therapy. This research raises a few questions, how is dance/movement therapy utilized with the pediatric oncology population? What are the effects? Mendelsohn (1999) described in this article the impact that illness can have on a child's body image, the goals of dance/movement therapy and its application specifically with pediatric patients in an Israeli hospital. Additionally provided were case examples of the processes of connecting and working with medically ill children in a hospital.

Mendelsohn (1999) began by discussing how hospitalized children suffer from the pain of the physical illness or injury, discomfort because of immobility, stress from being in the

hospital, isolation from friends and family, continuous procedures and tests, and struggle communicating their feelings based on their developmental process. Goodill and Morningstar (1993) in Mendelsohn (1999) state that when working with young cancer patients or very ill children a dance/movement therapist should keep in mind that the:

> "body and mind are inextricably link in the process of growth and development, movement heightens sensation, kinesthesia and proprioceptive functions in such a way as to make the body image a dynamic, rather than static aspect of self concept, the movement channel is our first communication system and is established in infancy, the therapeutic relation can be successfully established at a nonverbal level via movement interaction and the creative process with the elements of improvisation and symbolic expressive is inherently therapeutic in nature" (Mendelsohn, 1999, p.66).

The goals of psychosocial services as described by Goodill and Morningstar (1993) were also cited. These goals included decrease anxiety connected to hospital experiences, help the child adjust to changes in their functional abilities while providing positive affirmations, provide an active body experience, provide a space to appropriately express feelings about illness and hospitalization and lastly treat the child as a whole rather than focusing on their disease. Therapeutic goals are addressed and reliant on the child's length of stay; short-term goals included observation through the use of play and talk to evaluate and offer recommendations and long-term goals focused on providing emotional support and the opportunity for the children to express their feelings and anxieties. Information gathered during the assessment and intervention process is a result of examining the child's movements from body/functional, interpersonal and symbolic levels. The body/functional level is described as the way the child uses their physical abilities, the interpersonal level is described as the conversation between the child and the

therapist when movement is utilized as a means for communication and the symbolic level is described as the utilization of creative play in addition to movement where fears, wishes or thoughts are expressed by the child (Mendelsohn, 1999). The conclusion provided multiple case narratives with examples of the use of dance/movement therapy with ill children.

Cohen and Walco (1999) discussed within the context of cognitive, emotional and social development processes dance/movement therapy assessment as well as intervention strategies. The authors believed that including dance/movement therapy as part of the team addressing the psychosocial needs of the children and adolescents diagnosed with cancer, there would be more of an opportunity to facilitate a patients' ability to cope. It was stated that psychological and somatic concepts are identical and connected with the only difference being their initiation and that changing one component will cause changes the other. In addition to a child's potential death, chronicity, children and families felt unwell, invasive procedures, major side effects from treatment, drastic changes in physical appearance, missing school, relationships with friends, financial struggle, hospital visits and missed work were the psychological stressors identified (Cohen and Walco, 1999). They discussed the necessity for developmentally sensitive dance/movement therapy interventions based on the child's current life stage, as each stage encompasses specific milestones. Cohen and Walco (1999) stated that preschoolers and toddlers have limited communicative, thus very basic statements about their illness and treatment are understood. Language, cognition and emotional regulation can be strained with increased stress, leading to varied coping skills, immature behavior, and cognitive skills that can regulate emotions. In dance/movement therapy, working with "specific body movement structures that address starting and stopping, adjusting the shapes of the body within a designated space and opposite qualities (big/small, fast/slow, and up/down) are introduced" (Cohen and Walco,1999,

p. 38) and emotions can be expressed through the whole body and eventually become more body part specific. The integration between internal states and body movements and behaviors helps the child cope with environmental demands.

It is reported that school age children make substantial progress in their cognitive, linguistic and affective abilities such as distinguishing emotions. Dance/movement therapy with this age group provides concrete and interactive opportunity to address abstract concepts, the opportunity to address interpersonal concerns due to its social nature, and lastly the ability to explore emotions through nonverbal expression provides insight and awareness for the child (Cohen and Walco, 1999).

Lastly, adolescence is described as the stage focused on self-concept, developing formal thought, abstract reasoning, the ability to create and test hypotheses and the concept of the future. Additionally, mentioned were physical changes that lead to the development of body image and striving for independence and individuality. Chronic illness like cancer has the potential to impact physical development, resulting in disability or disfigurement which can heighten the adolescents' self-consciousness regarding their developing body. Chronic illness can also affect the adolescents' ability to partake in school and extra-curricular activities impacting their interaction with peers which can cause isolation. Cohen and Walco (1999) stated that dance/movement therapy interventions that "focus on mobilization, gross motor skills and emotional self expression aim to consolidate disease related changes in the body and subsequent function" (p.40) and that group formats are ideal do to the social component and "peer group influences on the psychological adjustment of adolescents with cancer" (p.40).

Tortora (2019) continued this conversation about the use of dance/movement therapy with the pediatric oncology population through the medical lens with more current information

and additional concepts. Tortora presented that there is potential for a nonverbal narrative to be created to prevent or heal traumatic effects of medical experiences if nonverbal body and dance/movement-based solutions are provided to the children with medical illnesses to express their feelings. She summarized dance/movement therapy with pediatric illness, specifically pediatric oncology as well as provided a definition of integrative oncology, addressed the difference between dance/movement therapy as a psychotherapeutic modality focused on the patients' psychosocial needs and dance and other recreational activities focused on entertaining patients. Tortora (2019) included a review of the US and worldwide use of dance/movement therapy with medically ill children to show the international influence and work of dance/movement therapists. The article concluded by discussing the advancements in the field, moving beyond past and current practice, the future of pediatric dance/movement therapy and integrated oncology not only in the US but also around the world.

The treatment goals, as it relates to medical illness, of dance/movement therapy is to improve stress management, improve quality of life, pain management techniques, reduce depression and anxiety, improve self-image and body awareness, decrease fatigue, increase energy, build resilience and hope, increase self-care, improve social support and learn to accept the unpredictability of life (Tortora, 2019). The body-mind-emotion continuum is a term developed by Tortora and described as a continuum that emphasized the connectivity and continual motion between the three elements of the self. Tortora (2019) explained that the therapeutic process could begin by exploring one of these elements based on the how the patient is presenting by asking specific questions. From a body perspective a dance/movement therapist can ask if the patient would like to get moving or if they would like to relax drawing up their sensations or energy, from a mind perspective how their day is going which draws upon the

patients thoughts about their illness and finally an emotion perspective by asking what mood they are in to understand their emotional state. Additionally, discussed is how DMT in pediatric oncology provides the opportunity for patients and families to process this overwhelming experience that may be difficult to express verbally. Tortora (2019) concluded by stating:

> The physical act of playful dancing literally mobilizes feelings and revives the pediatric patients' natural avenue of expression. Utilizing these innate forms of expression during the treatment may prevent the unspoken [traumatic] aspect of the medical experience from being held in the body. This author proposes that pediatric medical DMT can be a form of trauma prevention. This is clinically confirmed, each time a patient returns for their yearly checkup and speaks with warm reverie about the playful dancing experiences delightfully recounting specific details of our dance activities, seemly without awareness of the difficult treatment experience going on simultaneously (p. 22)

Conclusion

The above research indicates the connection between the mind and body and supports the use of dance/movement therapy with the pediatric oncology population. Linder et. al. (2018), provided evidence in their article that promoted children's ability to recall and communicate their experiences, which can result in a more in-depth understanding of the child's interpretation and meaning of their experiences and symptoms. Mant et. al. (2019), identified 5 themes reported from participants who recently received a cancer diagnosis. Dowler (2016) provided qualitative evidence that supports the use of ISD for pain reduction of young people. The findings of this study support the use of dance as an intervention for reducing pain. Ruland and Hamilton (2009) provided an important basis for a better understanding of the complexity of symptoms and problems in children with cancer and the development of instruments that can

catch the depth of children's symptom experiences which has the potential to improve patient provider communication and patient care. Puetz et. al. (2013) provided evidence of the usefulness of CAT with psychological symptoms and QOL. Madden et. al. (2010) supported the CATs ability to provide a wide range of effectiveness when it is utilized with people across the developmental lifespan. This study also used reliable and valid instruments with results that support the use of CAT.

Sherwood (2008) provided an explanation of how gesture, sound, and color can be facilitators of mind-body experience because they provide languages to communicate and work to modify difficult mind-body energetic patterns into patterns that create mental and physical well-being. Mendelsohn (1999) provided cases that illustrated how the opportunity to communicate through movement leads naturally to playing and non-verbal enactments through which hospitalized children can express their needs and feelings and discover and use their full movement potential. Addition the discussion of the body, interpersonal and symbolic levels provided a basis for assessment and interventions. Cohen and Walco (1999) addressed the importance of developmentally sensitive dance/movement therapy interventions through case studies that demonstrated the theoretical and clinical issues involved. Lastly, Tortora (2019) provided a comprehensive review of literature, definitions, case narratives, examples of global use of dance/movement therapy and called for more research to be done in the field of pediatric oncology and dance/movement therapy.

Although these articles enhanced the understanding of the symptoms and concerns of the pediatric oncology population, dance/movement therapy, medical dance/movement therapy and its use with the pediatric oncology population, there were limitations. In Linder et. al. (2018), Mant et. al. (2019), Dowler (2016) and Madden et. al. (2010), the sample size utilized was small

which has the potential for limited ethnic and racial diversity which inhibits results from being generalized. Due to the fact that the children voluntarily shared information on their self-management strategies the results were not inclusive of all participants in the Linder et. al. (2018) study as identifying these strategies were not the intention of the study. The interviews in Mant et. al. (2019) were intended to occur soon after the child received a cancer diagnosis but based on how this information was received the timing of the interviews varied which could have impacted the responses. To remain in accordance with ethical standards, participants who were coping well were chosen for the study versus those of all coping levels, which could have impacted the results. Lastly, Mant et. al. (2019), included various types of diagnosis leading to different types of treatments, focusing on specific cancers could have provided more detailed insight into the experiences.

The inability to follow up with participants in Dowler (2016) limits the ability to report long-term effects of ISD, which could impact the overall efficacy of this intervention. There were insufficient intervention details in Puetz et.al. (2013), which could limit the ability to distinguish successful and unsuccessful interventions. The lack of information on medication use restricts the opportunity to consider the effects of medication on a patient and their relationship with a CAT intervention, subsequently impacting the overall results. The duration between post-intervention and follow up and the consistency in which the patient engaged in CAT were not addressed, all of which can influence the follow up results. In Madden et. al. (2010), parent reported symptoms limit the report to observation whereas patient reporting of symptoms would provide first-hand accounts. Utilizing different instruments per phase when gathering data creates inconsistency Based on their type of review, Ruland and Hamilton (2009), did not summarize the frequency of reported symptoms, assess the quality of research studies, or the

validity or reliability of instruments used to elicit symptoms. Since the focus was to summarize the types of symptoms, the quality of these symptoms were not addressed which can limit the understanding of their intensity.

The limitations listed above provide a foundation to begin anew and revise the research on pediatric oncology and dance/movement therapy. In the future, researchers should establish a larger sample size, classify them as a child or adolescent, and compare both to each other to understand how a cancer diagnosis is experienced as a child versus adolescent. Developmentally, they are at different stages and comprehend and experience symptoms and concerns differently, thus it is necessary to create developmentally appropriate ways for children to communicate their needs. This could increase the amount of child-reports which would provide first-hand accounts of an experience versus a parent report which would be an observed account of the experiences. Additionally, the relationship between symptoms, gender, age, and the differences in cultural identities such as race, ethnicity, religion, socioeconomic status and geographical location can impact how patients experience symptoms and problems and their responses to events and how they need support. Knowledge and consideration of the complex nature of human beings will provide the clinical team with information to appropriately help a client.

Majority of the literature that was found focuses on the verbal communication of the cancer experience but neglects the use of nonverbal modes of communication such as dance/movement therapy. Furthermore, any research done with dance/movement therapy and a cancer diagnosis focuses on the adult population. More research is needed on the use of dance/movement therapy with the pediatric oncology population, with studies that specifically look at the most predominant symptoms, such as pain and anxiety that are being experienced.

Additionally, research is needed on the trauma experience and how dance movement therapy can be utilized to address the trauma that comes with a cancer diagnosis.

The above research generates the question: Can dance/movement therapy decrease pain and anxiety and increase quality of life in the pediatric oncology population?

Method

The purpose of developing a method was to examine the effects that dance/movement therapy has on the pediatric oncology population as it relates to their level of pain and anxiety and their overall quality of life. Prior research has revealed minimal information on the use of the creative arts therapies with pediatric oncology and primarily focuses on the adult oncology population. The researcher believes that by developing their own method they will obtain a better understanding of how to utilize Dance/Movement Therapy with the pediatric oncology population and subsequently contribute to a field that is in need of more research.

With the help of the researcher's site supervisor at the Cancer Support Community and the social worker at the Lehigh Valley Reilly Children's Hospital, this researcher established a weekly group with the pediatric oncology patients at a suburban area pediatric children's hospital, the Lehigh Valley Reilly Children's Hospital. With this information, the researcher created and engaged in two group treatment sessions with a group of pediatric oncology patients that took into consideration cultural and systemic issues, age, multiple ability levels, diagnoses, and pre-existing treatment protocol to ensure that the sessions are appropriate. The group sessions lasted sixty minutes and took place once a week in a conference room in the hospital. After establishing relationships with the group member during the initial 6 sessions, the researcher created session plans that focused on either decreasing pain or anxiety and increasing quality of life.

After speaking with the social worker at Lehigh Valley Reilly Children's Hospital, a flyer was created and emailed to the families with children who fell within the age range. This flyer provided a brief explanation of dance/movement therapy goals, the date, time, age group and location. Responses were received from interested families with children between the ages of 4-7. The heterogeneous group of participants were 4 years old with varying cancer diagnosis. The flyer and session plans, (Appendix A,B,C) have been provided for reference.

This researcher engaged the participants in discussions about the pain and anxiety they experienced as well as their quality of life. This researcher referred to pain as feeling achy, hurt, or yucky and anxiety as feeling nervous or scared; terminology was age appropriate to ensure their understanding. Throughout the sessions, the researcher recorded the observed movement patterns, such as pathways, active or held body parts, qualities of movement, and modifications to movement and compared the progression of the participant's movements from the start of the session until the end. Immediately following the conclusion of the session other detailed observations were made from memory.

Results

Session: Anxiety and Coping Observations

The space was entered with high energy; rapid speech, fluid ideas and storylines, expansive arm movements, and quick leg movements. As the space was being explored by the children, their entire bodies were engaged causing quick and shallow chest breathing. The energy level was high but with increased mental and physical engagement the energy level decreased. Breathing became slower and deeper, resonating from the abdomen. Verbal communication was loud during moments of high energy but softened to a whisper to mirror this researchers voice as well as the decreased energy level. Imaginary play was utilized and various scenarios were

created that involved mental and physical exertion such as creating a plan, jumping, climbing, rolling, running, and punching, and moments of recuperation such as going to the designated safe space and laying down and breathing. During moments of stillness, this researcher tried to introduce breathing through the shapes, which was not welcomed. It is my observation that although the body was resting, the mind was not and it was not the correct time for this intervention.

Attempting a more active approach, this researcher introduced the yoga pose cards. Multiple poses were explored but were initially done within the confines of the created safe space. Upon becoming more comfortable, the exploration of poses moved to the center of the room. Although multiple poses were explored, tree pose and eagle pose were the poses that received the most attention which could have been because finding balance in these poses was more attainable. Mirroring of these poses occurred with additional counting which promoted the connection of the breath and increased balance. When balance was lost, there was an increase of energy displayed through loud laughter and a flinging of the body to the floor. Counting while in the pose provided a goal, which lead to a sustained balance and increased ability to cope when they could not hold the pose producing less laughter and throwing of the body. While balanced in the poses, breathing returned to slow and deep while offering sustained eye contact on an object. The ability to remain balanced provides evidence for the ability to remain focused on one task. The body positioning was more vertical as tree pose and eagle pose were being explored.

When engaged in breathing through the shapes, there was an observable and sensed feeling of calm and peace. A circle, star, triangle, figure eight, and square, were the shapes explored with the figure eight and square receiving the most attention. The pointer finger, tracing the shapes, moved with lightness, slowly and directly producing smiles, direct eye contact and

decreased special distance between this researcher. The movements remained within the near kinesphere, close to the body, indicating the ability to exercise control over bodily movements and energy. It was observed that the breathing occurred in the abdomen. During the moments of decreased energy and/or stillness and additionally mirrored was the researchers use of soft vocal tone, leading to an increased ability to verbally communicate.

At the conclusion of the session, writer offered the breathing shapes and choice of favorite yoga cards to bring home to practice. This offering was met with a deep abdominal breath, smiles and direct eye contact. After placing these items lightly and specifically in their backpacks, the space was exited calmly, with a vertical spine utilizing light footsteps while walking at a slower pace with arms slightly swaying by their sides.

Session: Pain Management Observations

Due to the pandemic of Covid-19, the pain management session was not conducted. However, the session would have begun with the children warming up their bodies to music through light movement. The children would then listen to a story about pain and subsequently use their bodies to act out the story. The session would have concluded with a discussion, time for relaxation and optional art creation. The goal of this session would have been to decrease pain through the use of guided imagery and movement. Additionally, social connection, ability to identify and describe painful sensations and areas and develop a coping mechanism for handling these sensations would have also been addressed.

Discussion

The utilization of dance/movement therapy provided the opportunity to examine the effect that this approach has on decreasing the pain and anxiety experienced by the pediatric oncology population. Through observation, I witnessed somatic responses and shifts due to

dance/movement interventions that specifically addressed anxiety. These shifts support Dowler's (2016) findings that a somatic approach can aid in focusing on the breath and subsequently can develop into connecting the breath with movement. The presentation of anxiety or heightened energy could have been due to nervous energy. My experience and observations support the use of dance/movement therapy to aid in decreasing anxiety and increasing quality of life in pediatric oncology patients.

The experienced of working with children with a cancer diagnosis should also be noted. A session plan provides a guide but when working with young children with a cancer diagnosis, especially children as young as 4, there will be deviations from this lesson plan. It was evident that a moderately energetic structured warm up that required focus and body control did not match the high energy that was being experienced. The spontaneous imaginative play that became the warm up versus the planned warm up provided information about the current emotional and physical state as it related to the needs of the participants. Based on the need for imaginary play of varying topics, it was evident that there was a necessity for a variety of storylines that required movement including jumping, punching, running, walking, stacking pillows, hopping, diving, rolling etc. This experience can be linked to the dynamic interactive process of self-management described by Linder et. al. (2018) in which patients with a chronic illness utilize strategies that allow them to cope with the elements of their symptoms throughout their daily lives as well as Koch and Fischman's (2011) focus on embodied enactive work.

The overarching theme of safety was very evident. Subthemes included but were not limited to creating safety and imaginative play with angry undertones and characters who were mean and needed to be caught and killed. Additionally, there is the possibility that hospital personnel are viewed as "bad guys" because they do hurtful, yet necessary, things such as blood-

work and administer treatments. Overall, there is a clear yearning for safety and to be saved. Tortora (2019) addresses this trauma experience stating that dancing mobilizes feelings and is a means for expression. Using these forms of expression during treatment may prevent the traumatic pieces of the medical experience from being held in the body, ultimately proposing that pediatric medical DMT can be a form of trauma prevention.

The method, although very informative, included limitations. Due to the pandemic Covid-19, the pain management session was unable to be conducted. The inability to engage in this session makes it difficult to provide first hand observations that support the use of dance/movement therapy to decrease pain. Since the participants were receiving outpatient treatment, attendance to the group sessions was inconsistent due to side effects of their treatment or other prior commitments. This inconsistency made it difficult to document progress from a dance/movement therapy perspective as well as the opportunity to build a relationship with them. The small group size, the age (4) of the participants and the lack of cultural diversity limited the opportunity for an extensive amount of diverse information.

The above limitations lend themselves for additional avenues of future exploration. Working with the pediatric oncology population in an inpatient setting would alleviate the inconsistent attendance, allow for more access to a diverse group of patients and provide a more consistent experience and fluid documentation process. Working with the pediatric oncology population in an outpatient setting would require information regarding treatment schedules to ensure appropriate session scheduling to limit interference with treatment side effects.

Dance/movement therapy has the ability to improve stress management, improve quality of life, develop pain management techniques, reduce depression and anxiety, improve self-image and body awareness, decrease fatigue, increase energy, build resilience and hope, increase self-

care, improve social support and learn to accept the unpredictability of life (Tortora, 2019). Together with the Lehigh Valley Reilly Children's Hospital and Cancer Support Community of the Greater Lehigh Valley I had the opportunity to establish dance/movement therapy sessions with the pediatric oncology patients receiving outpatient treatment. Through these sessions I was able to witness a decrease in their anxiety, enhance their social connection, increase their ability to control their energy level, increase their mind-body connection and improve the clarity of their verbal communication. Madden et. al. (2010) stated:

> by using creative expression, a child or adolescent with cancer can express feelings about the course of the disease and tumultuous treatment through dance/movement, music and art. This outlet allows the patient to creatively and kinesthetically process the assaults of cancer and its treatment, and thus establish a stronger sense of self and improved quality of life. (p.133)

With this in mind, more research is needed regarding the use of dance/movement therapy with the pediatric oncology population.

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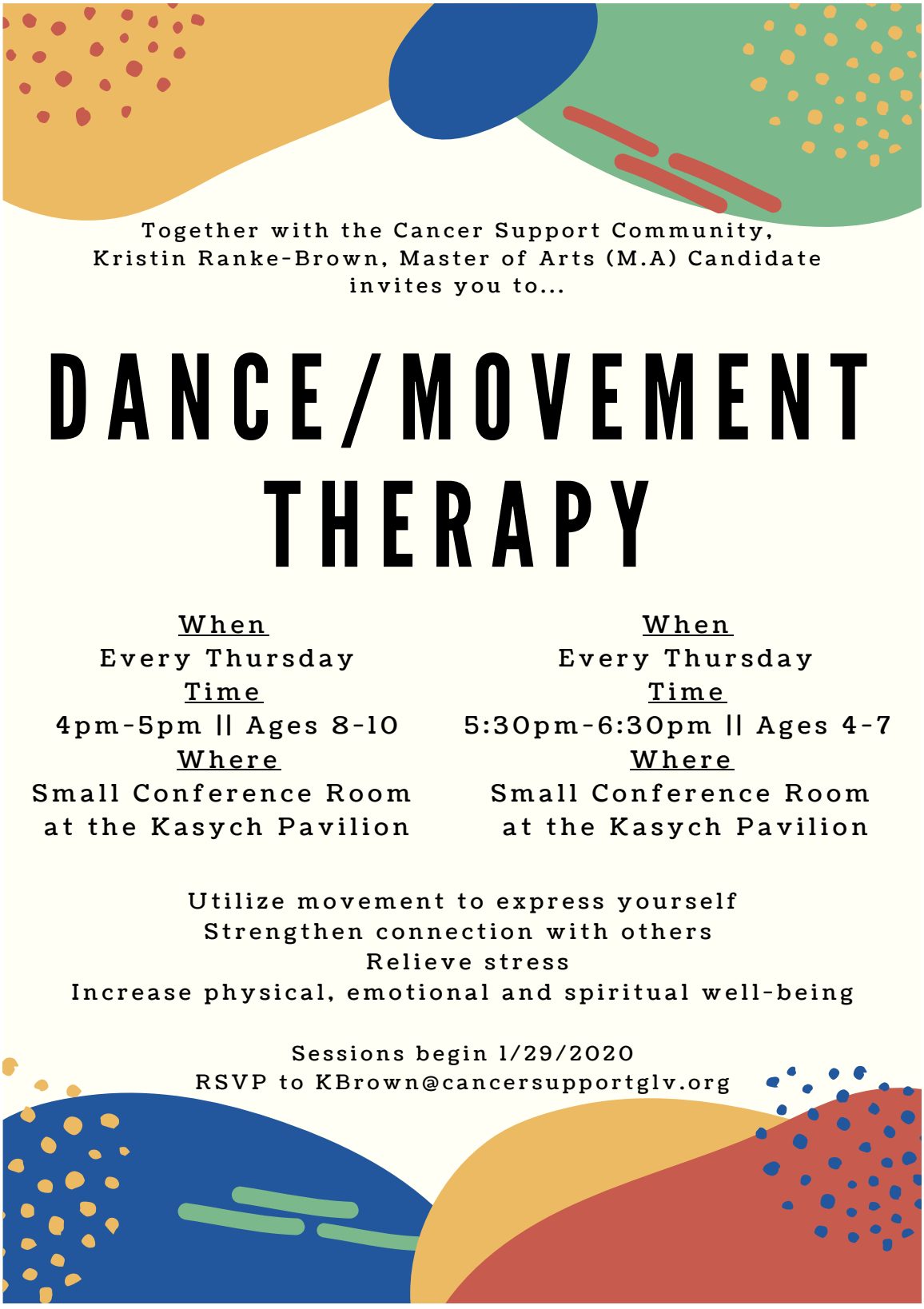
Appendix A


Together with the Cancer Support Community,
Kristin Ranke-Brown, Master of Arts (M.A) Candidate
invites you to...
DANCE/MOVEMENT THERAPY
When
Every Thursday
Time
4pm-5pm || Ages 8-10
Where
Small Conference Room
at the Kasych Pavilion
When
Every Thursday
Time
5:30pm-6:30pm || Ages 4-7
Where
Small Conference Room
at the Kasych Pavilion
Utilize movement to express yourself
Strengthen connection with others
Relieve stress
Increase physical, emotional and spiritual well-being
Sessions begin 1/29/2020
RSVP to KBrown@cancersupportglv.org

Appendix B

Session: Anxiety and Coping Skills Recognition
Goal: Decrease Anxiety
Duration: 45 Minutes - 1 Hour
Materials: Laptop/iPhone for music, tape, yoga pose cards,

WARM UP:

Entering and exploring the space:
- Walking and clapping together in a circle
- Music: Cheerful Positive Fun by UniqueSound

Circle Dance:
- Music: The Circle Song by The Kiboomers

Shake Wiggles Out:
- Music: Shake My Sillies Out by Raffi

Hello and Commonality Circle:
- Jump in the center if you are feeling nervous?
- Jump in the center if you are feeling scared about something.
- What does your body feel like when you get nervous or scared?
- What does your body look like on the inside?

THEME DEVELOPMENT: Coping Skills Experience

Breathing Through Shapes:
- Trace the shapes and following the breathing in and out instructions.

Yoga Poses:
- Choose which poses we want to do.

Muscle Relaxation:
- Guided Progressive Muscle relaxation

CLOSING:

Discussion:
- What does your body feel like now? What doe sit look like on the inside now?
- Do you feel better?
- What did you like the most?

Closing:
- Thank you.
- Hands in pick scarf color “I am _____!”
- We are Brave!

Appendix C

Session: Pain Management
Goal: Decrease Pain
Duration: 45 Minutes - 1 Hour
Materials: Laptop/iPhone for music, scarves, egg shakers, yoga pose cards, Paper and crayons (optional)

WARM UP:

Entering and exploring the space:
- Walking and clapping together in a circle
- Music: Cheerful Positive Fun by UniqueSound

Circle Dance:
- Music: The Circle Song by The Kiboomers

Shake Wiggles Out:
- Music: Shake My Sillies Out by Raffi

Hello and Commonality Circle:
- Jump in the center if you are feeling yucky
- Jump in the center if you are feeling good
- Jump in the circle if anything hurts today
- What do you do when you don't feel good or something hurts?

THEME DEVELOPMENT: Pain Management

Guided Story: Field of Flowers

Moving Story: Field of Flowers
- Have the children move through/act out the story.

Discussion
- Did you like using your imagination like that?
- Did it help you feel better?
- What do you feel like now that you've taken all the yucky stones out?

CLOSING:

Relaxation:
- Yoga Poses in circle– Choose 2 each to do as a group

Creation: Optional – Time and Behavior Permitting
- Draw their field of flowers

Closing:
- Thank you.
- Hands in pick scarf color "I am _____!"
- We are Brave!

THESIS APPROVAL FORM

Lesley University
Graduate School of Arts & Social Sciences
Expressive Therapies Division
Master of Arts in Clinical Mental Health Counseling: Dance/Movement Therapy, MA

Student's Name: Kristin Ranke-Brown

Type of Project: Thesis

Title: Developing a Method: How Dance/Movement Therapy Affects Pain, Anxiety and Quality of Life in Pediatric Oncology

Date of Graduation: May 16, 2020
In the judgment of the following signatory this thesis meets the academic standards that have been established for the above degree.

Thesis Advisor: Annette Whitehead-Pleaux, MA, MT-BC